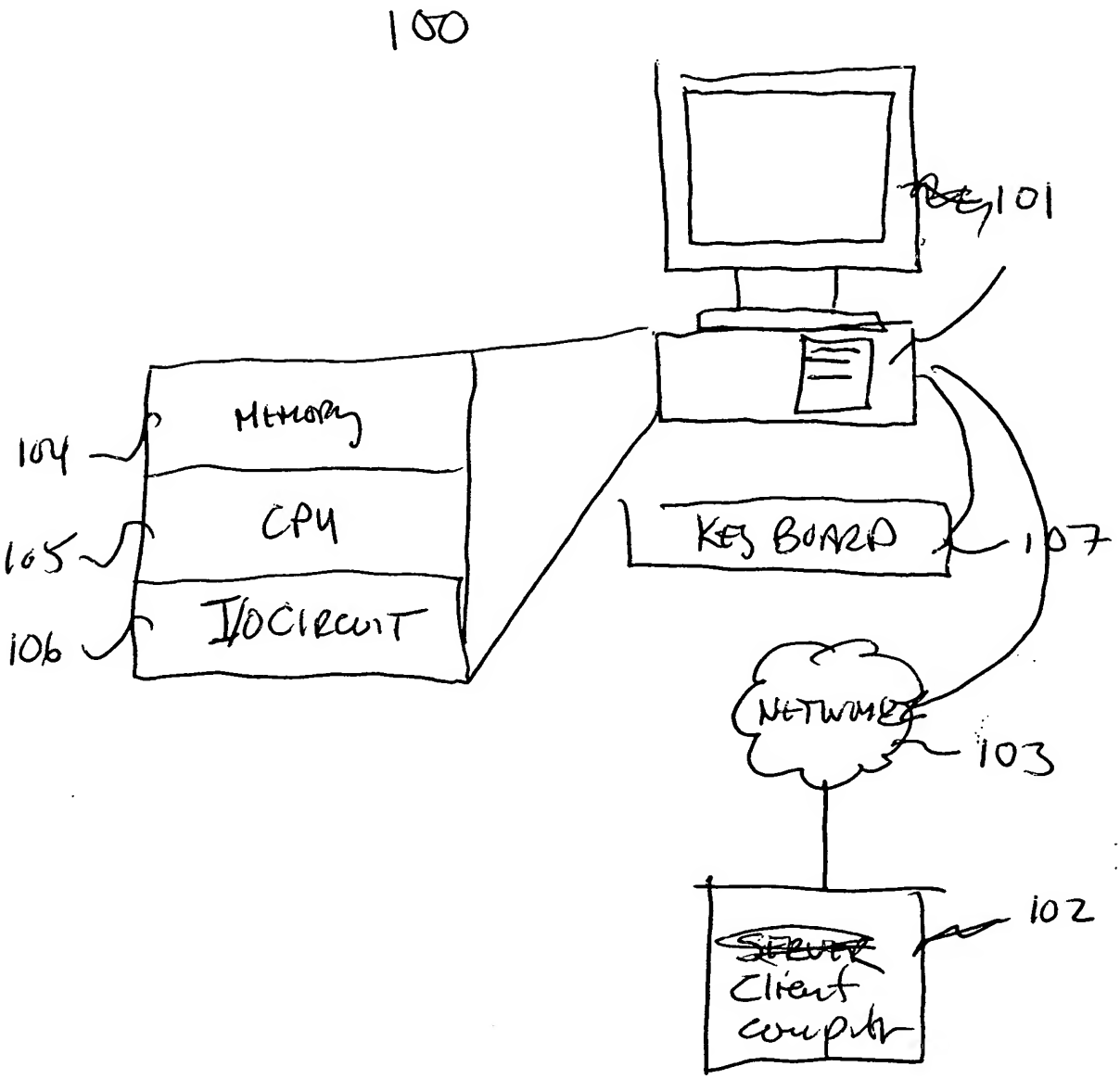

100
101
MEMORY
104
CPU
105
I/O CIRCUIT
106
KEY BOARD
107
NETWORK
103
Client computer
102

Fig 1

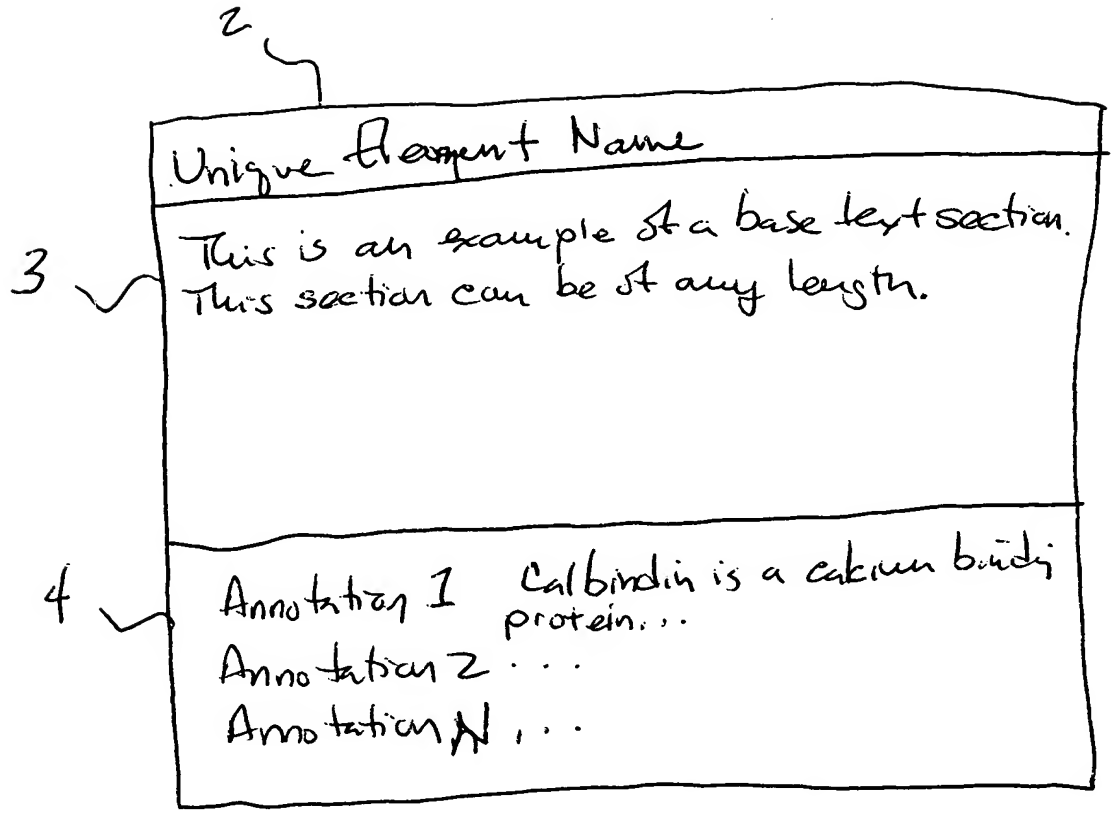

2
Unique Element Name
3
This is an example of a base text section.
This section can be of any length.
4
Annotation 1 Calbindin is a calcium binding protein...
Annotation 2...
Annotation N...

Figure 2

Clone Shopping Cart

Instructions: You may change the quantity of an item in your shopping cart by changing the value i column. To remove an item, simply enter a quantity of zero. To submit changes to your cart, click t button. When you are satisfied with your cart's contents, click the 'Proceed to Checkout' button.

Quantity	Catalog #	Description	Price
1	HORF.01		1,147
Clone ID: IOH10952			
1	HORF.01		1,147
Clone ID: IOH14505			
1	HORF.01		1,147
Clone ID: IOH10120			
1	HORF01	Ultimate™ ORF Clones (Human)	900.0
Clone ID: IOH1903			
		Total*	4,34:

Recalculate | Clear Cart | Proceed to Checkout

***Note:** Account specific pricing, applicable tax, freight, and handling charges will be included in yo confirmation.

Figure 3

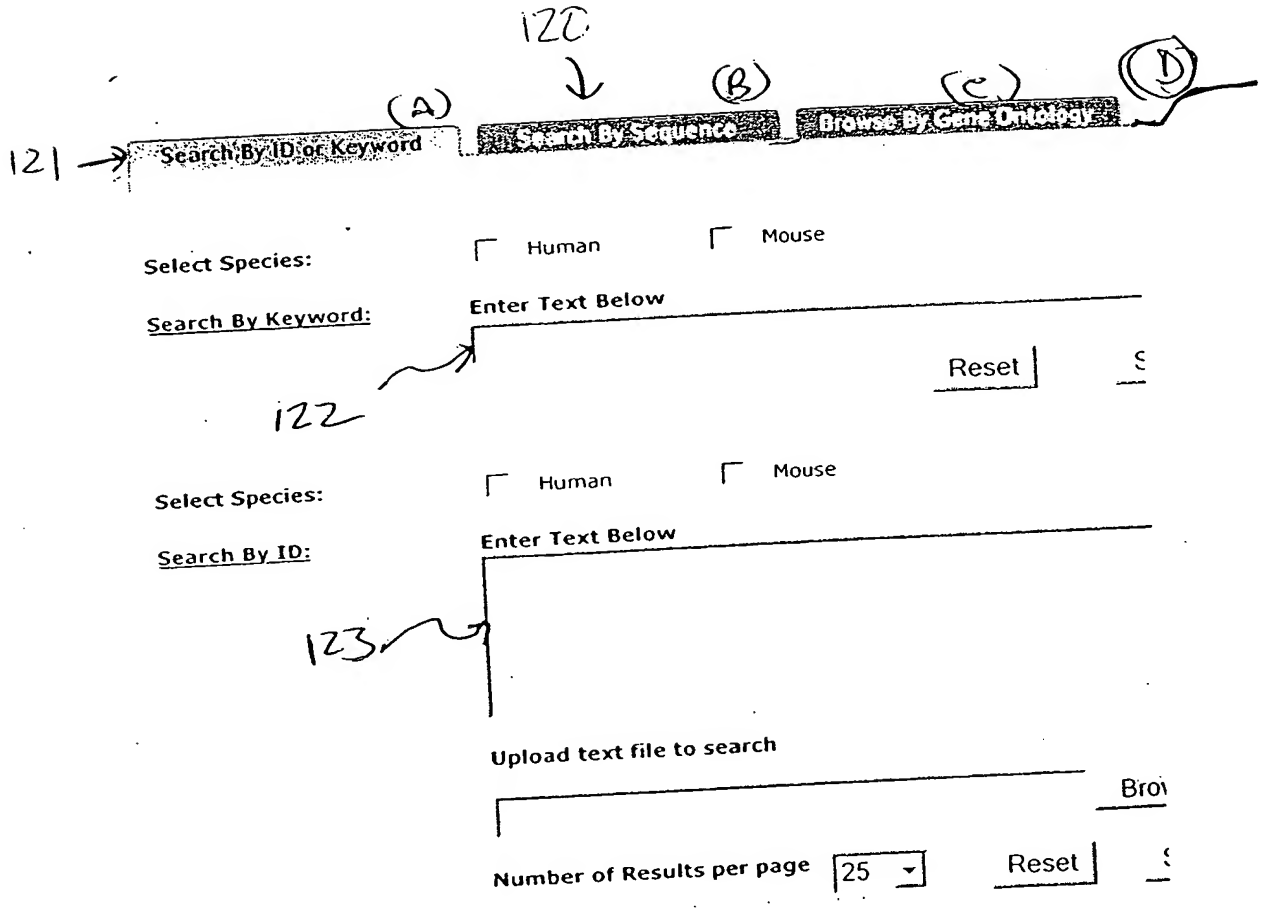

120
(A)
(B)
(C)
(D)
121
Search By ID or Keyword
Search By Sequence
Browse By Gene Ontology
Select Species:
Human
Mouse
Search By Keyword:
Enter Text Below
122
Reset
Select Species:
Human
Mouse
Search By ID:
Enter Text Below
123
Upload text file to search
Number of Results per page
25
Reset

Fig 4

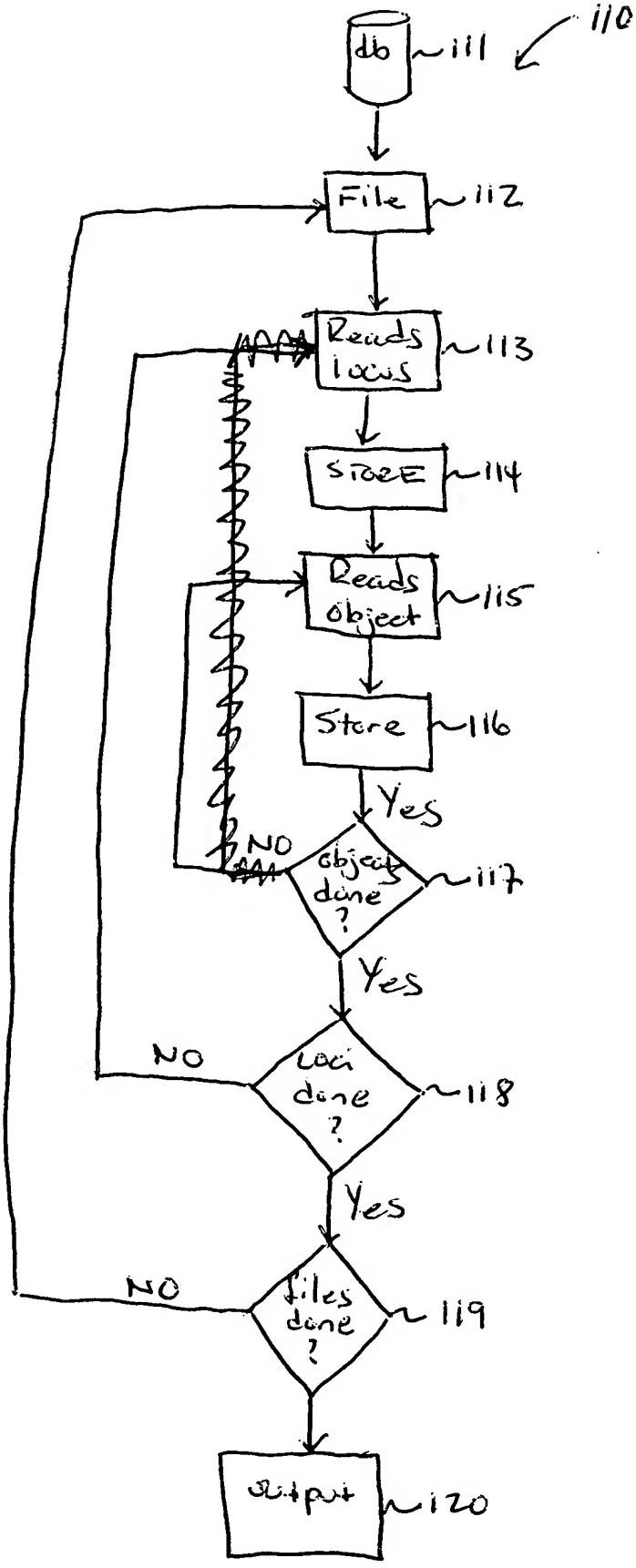
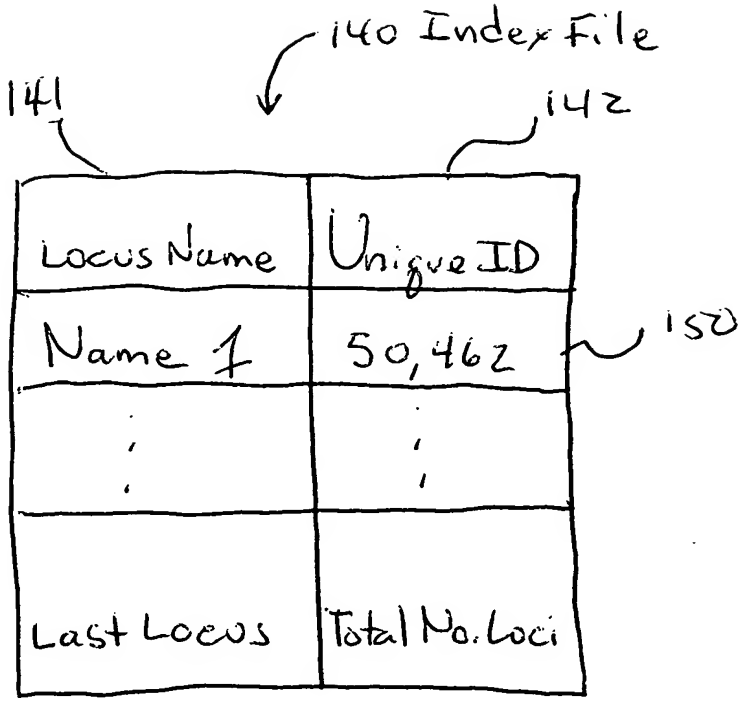

110
db
111
File
112
Reads loci
113
store
114
Reads Object
115
Store
116
Yes
NO
objects done ?
117
Yes
NO
Loci done ?
118
Yes
NO
files done ?
119
output
120

Fig 5


140 Index File
141
142
Locus Name
Unique ID
Name 1
50,462
150
Last Locus
Total No. Loci

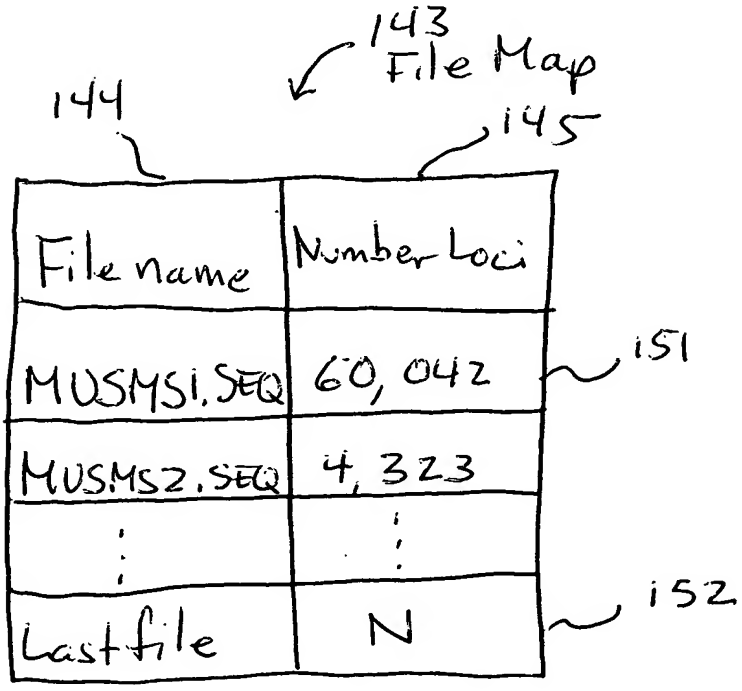

143
File Map
144
145
File name
Number Loci
MUSMS1.SEQ
60,042
151
MUSMS2.SEQ
4,323
Lastfile
N
152

Fig 6

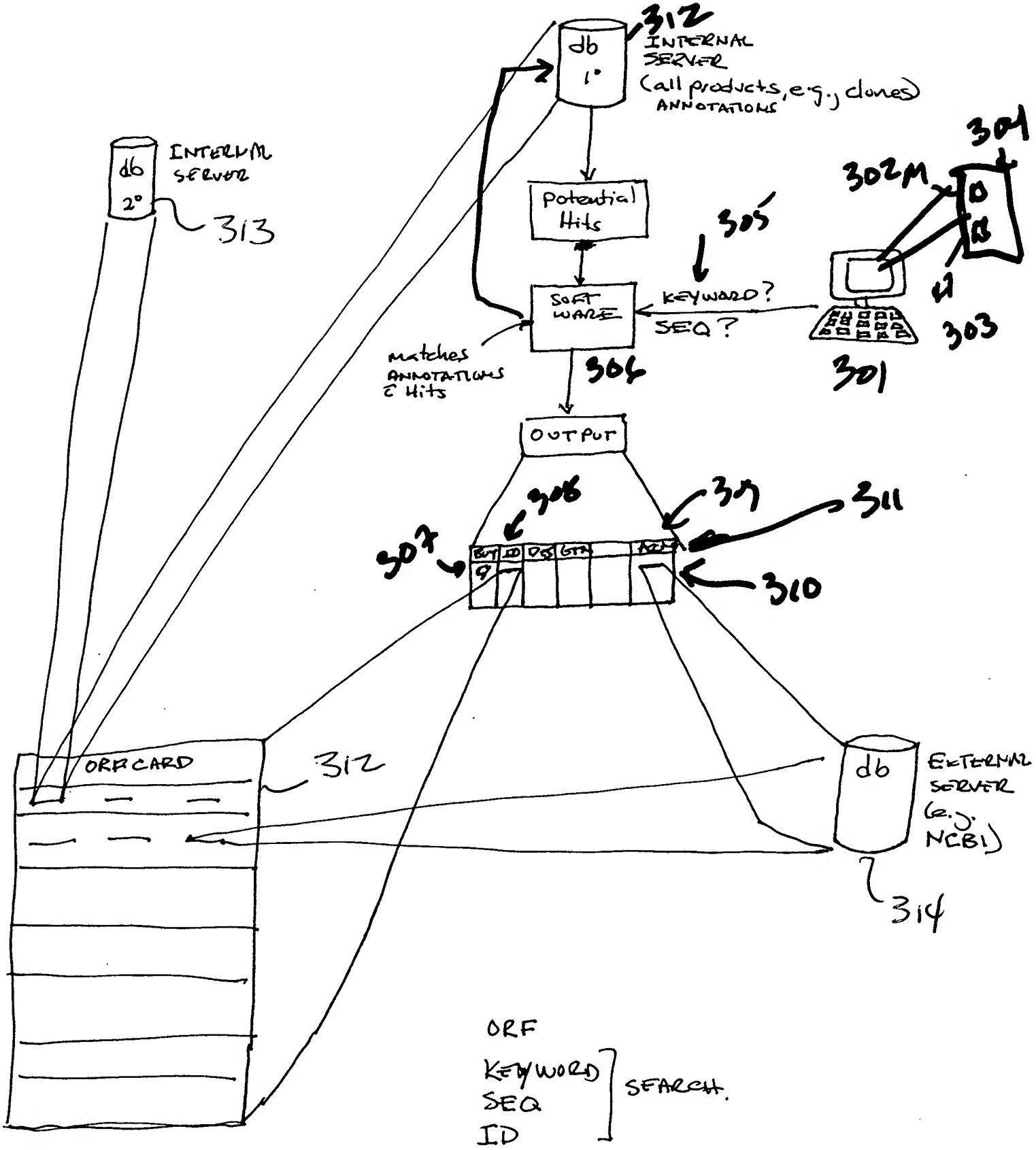

db
1°
312
INTERNAL SERVER
(all products, e.g., clones)
ANNOTATIONS
db
2°
INTERIM SERVER
313
Potential Hits
305
KEYWORD?
SEQ?
SOFT WARE
matches
ANNOTATIONS
& Hits
304
301
302M
303
OUTPUT
306
307
309
311
310
ID
DES
ORFCARD
312
db
EXTERNAL SERVER
(e.g. NCBI)
314
ORF
KEYWORD
SEQ
ID
SEARCH.

FIG 7

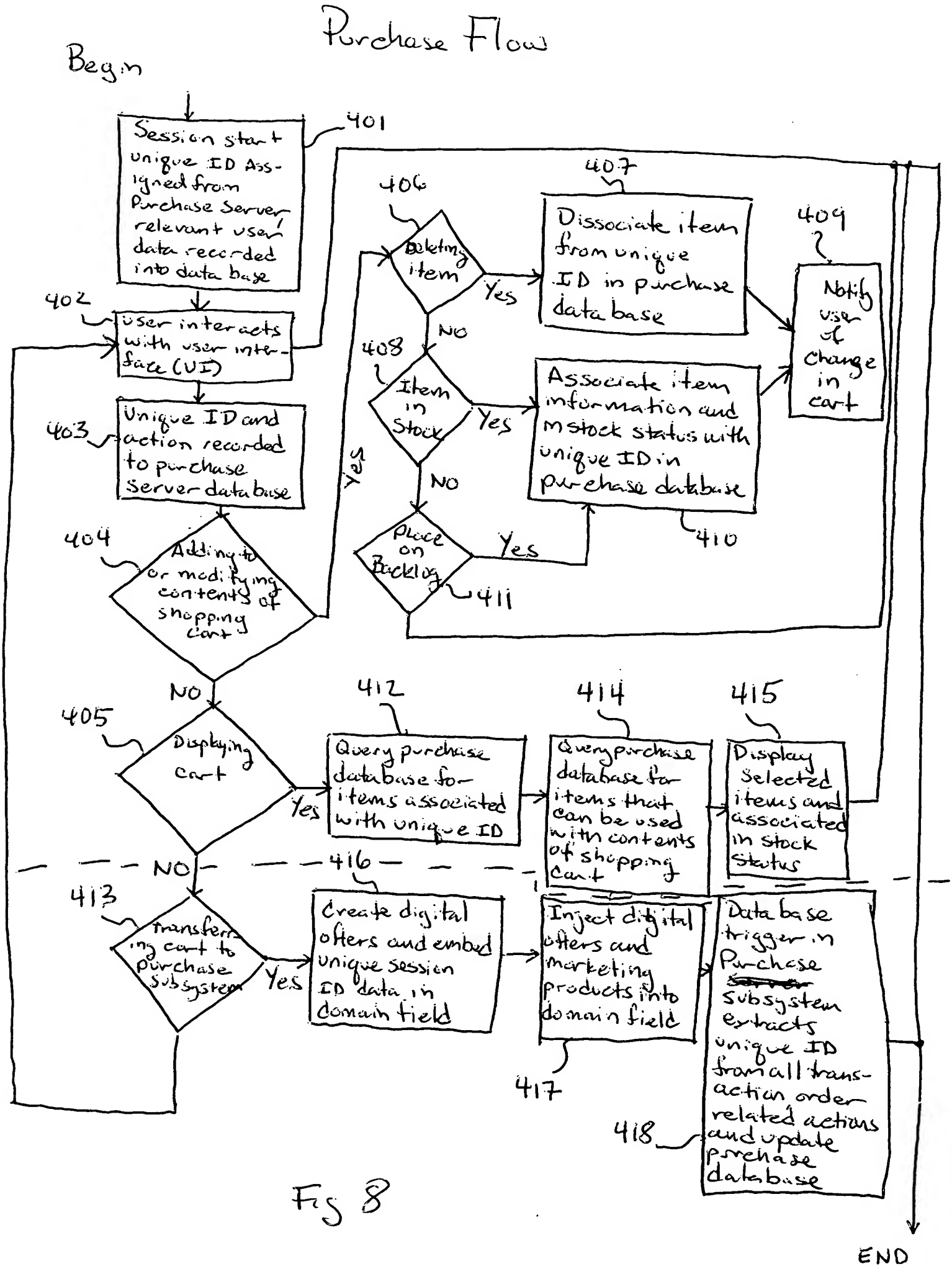

Purchase Flow
Begin
Session start unique ID Assigned from Purchase Server relevant user data recorded into data base
401
User interacts with user interface (UI)
402
Unique ID and action recorded to purchase server database
403
Adding to or modifying contents of shopping cart
404
Displaying cart
405
Deleting item
406
Dissociate item from unique ID in purchase database
407
Notify user of change in cart
409
Item in Stock
408
Associate item information and in stock status with unique ID in purchase database
410
Place on Backlog
411
Yes
NO
Query purchase database for items associated with unique ID
412
Query purchase database for items that can be used with contents of shopping cart
414
Display selected items and associated in stock status
415
Transferring cart to purchase subsystem
413
Create digital offers and embed unique session ID data in domain field
416
Inject digital offers and marketing products into domain field
417
Database trigger in Purchase subsystem extracts unique ID from all transaction order related actions and update purchase database
418
END

Fig 8

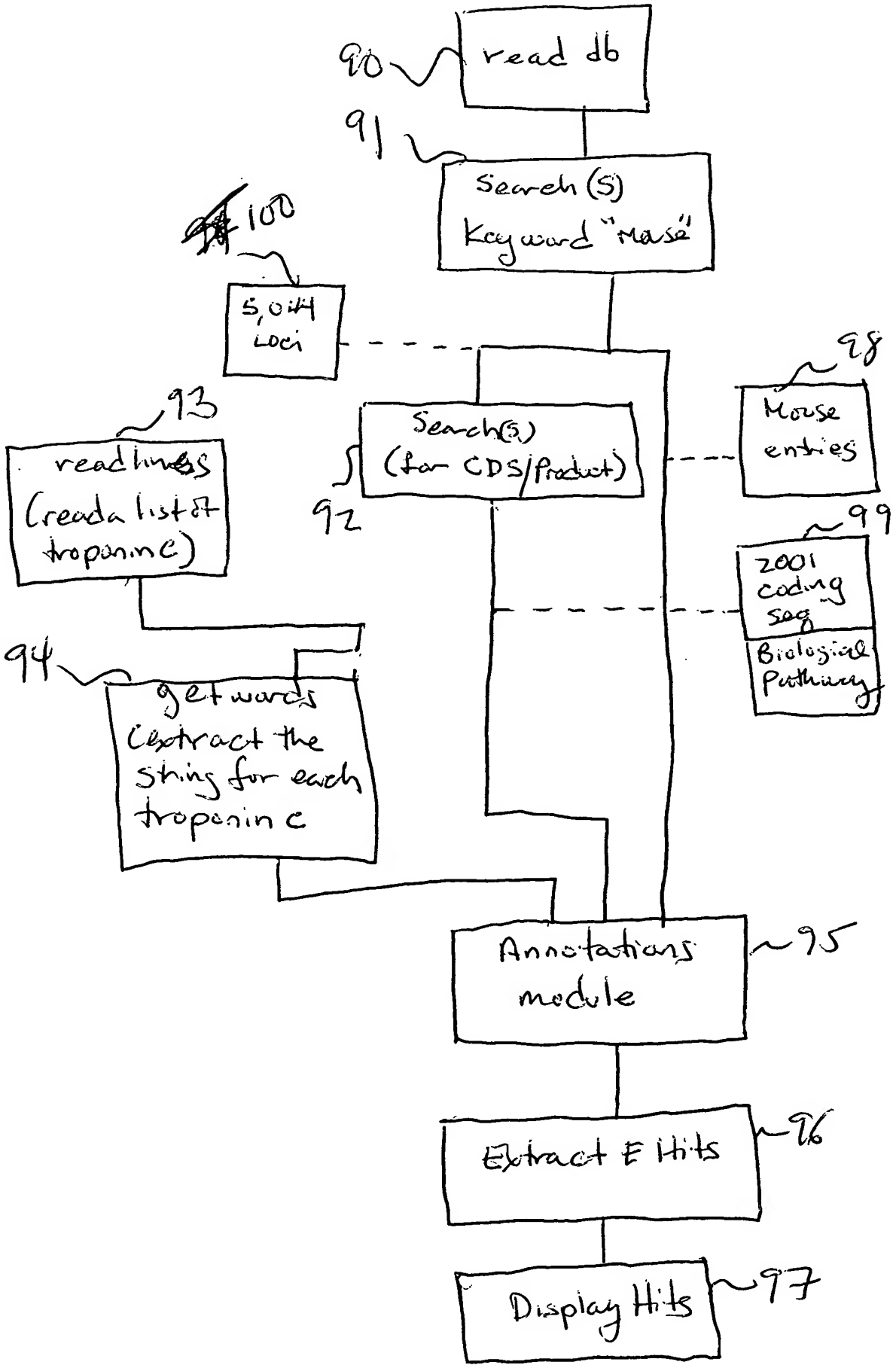

read db
90
91
Search (S)
Keyword "mase"
100
5,014
Loci
98
Mouse
entries
93
read lines
(read a list of
troponin c)
Search(S)
(for CDS/product)
92
99
2001
coding
seq
Biological
Pathway
94
get words
(extract the
string for each
troponin c
Annotations
module
95
Extract E Hits
96
Display Hits
97

Fig 9

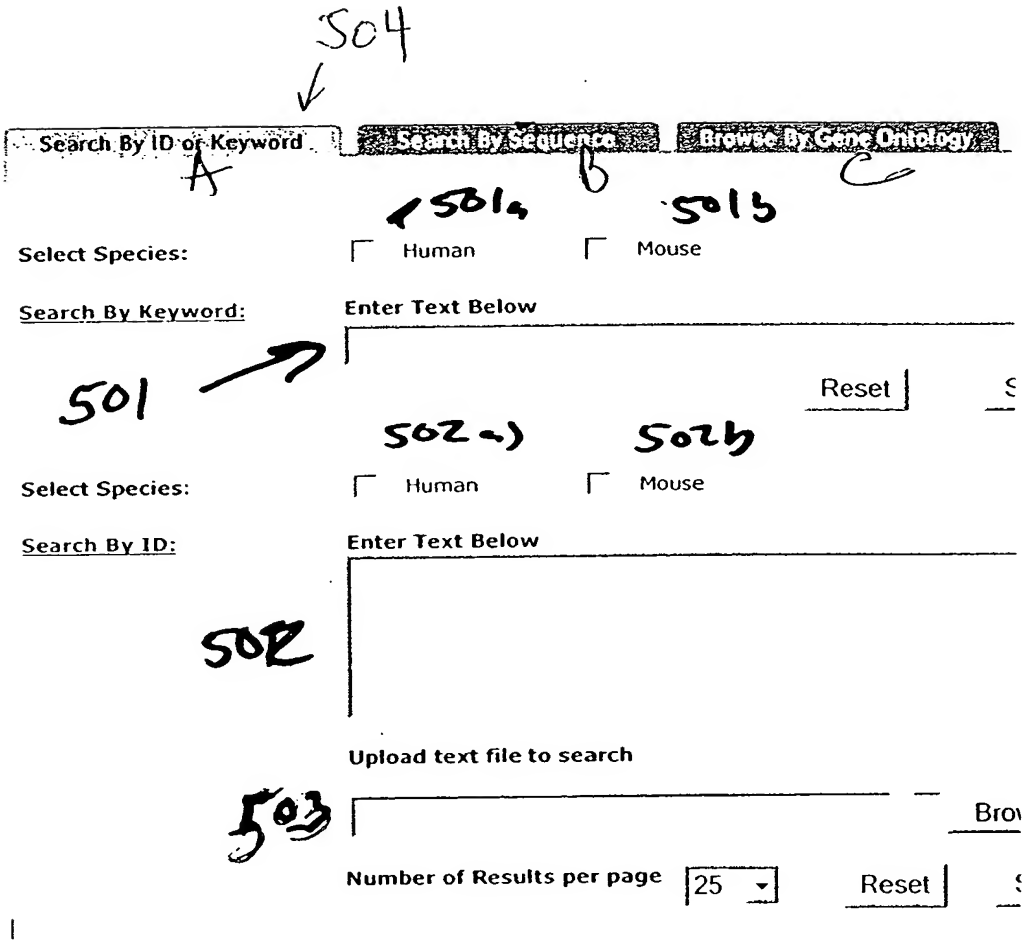

504
Search By ID or Keyword
Search By Sequence
Browse By Gene Ontology
A
B
C
501a
501b
Select Species:
Human
Mouse
Search By Keyword:
Enter Text Below
501
Reset
502a
502b
Select Species:
Human
Mouse
Search By ID:
Enter Text Below
502
Upload text file to search
503
Bro
Number of Results per page
25
Reset

Fig 10

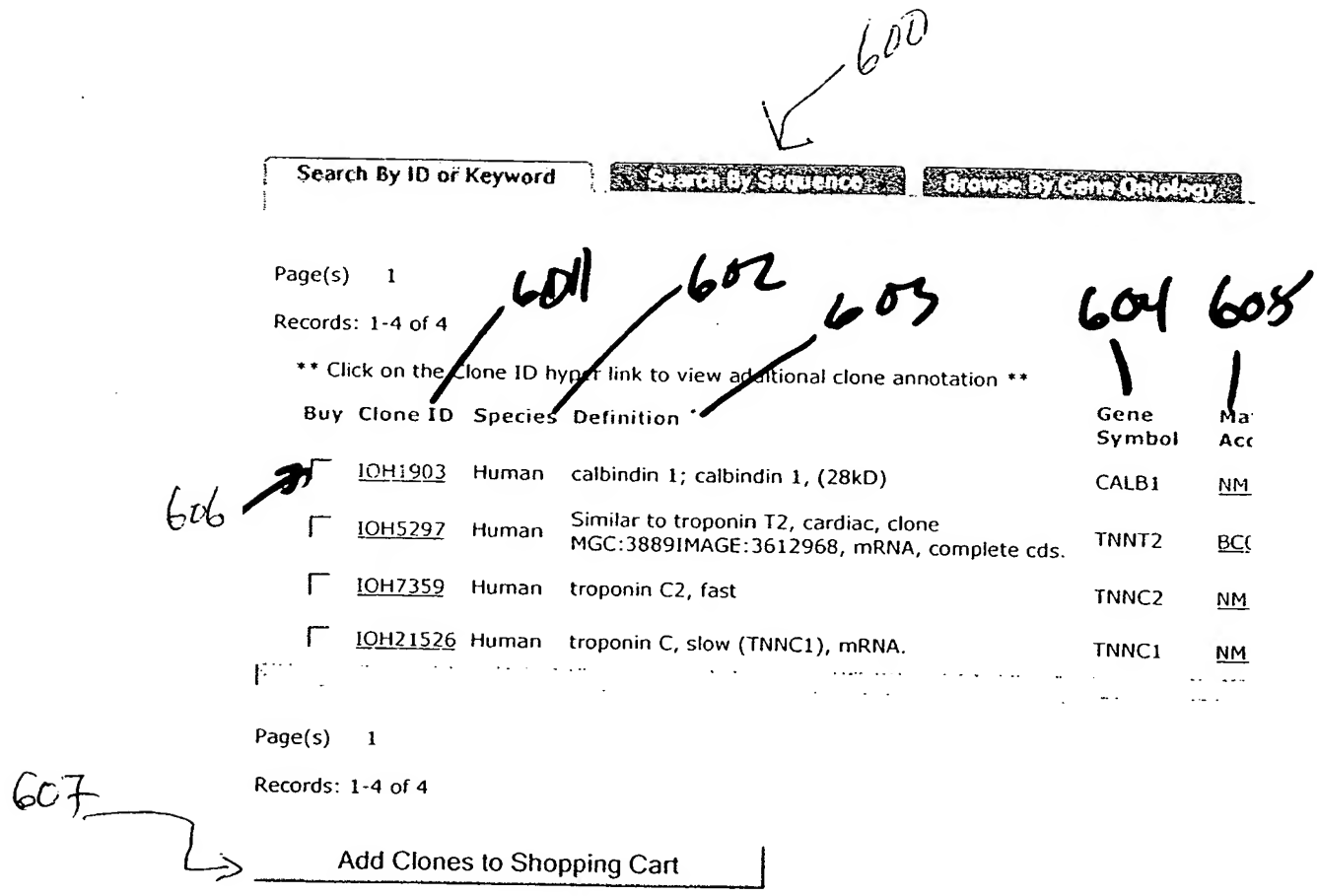

600
Search By ID or Keyword
Search By Sequence
Browse By Gene Ontology
Page(s) 1
Records: 1-4 of 4
** Click on the Clone ID hyper link to view additional clone annotation **
601
602
603
604
605
606
607
Buy
Clone ID
Species
Definition
Gene Symbol
Ma Acc
IOH1903 Human calbindin 1; calbindin 1, (28kD) CALB1 NM
IOH5297 Human Similar to troponin T2, cardiac, clone MGC:3889IMAGE:3612968, mRNA, complete cds. TNNT2 BC
IOH7359 Human troponin C2, fast TNNC2 NM
IOH21526 Human troponin C, slow (TNNC1), mRNA. TNNC1 NM
Page(s) 1
Records: 1-4 of 4
Add Clones to Shopping Cart

Fig 11

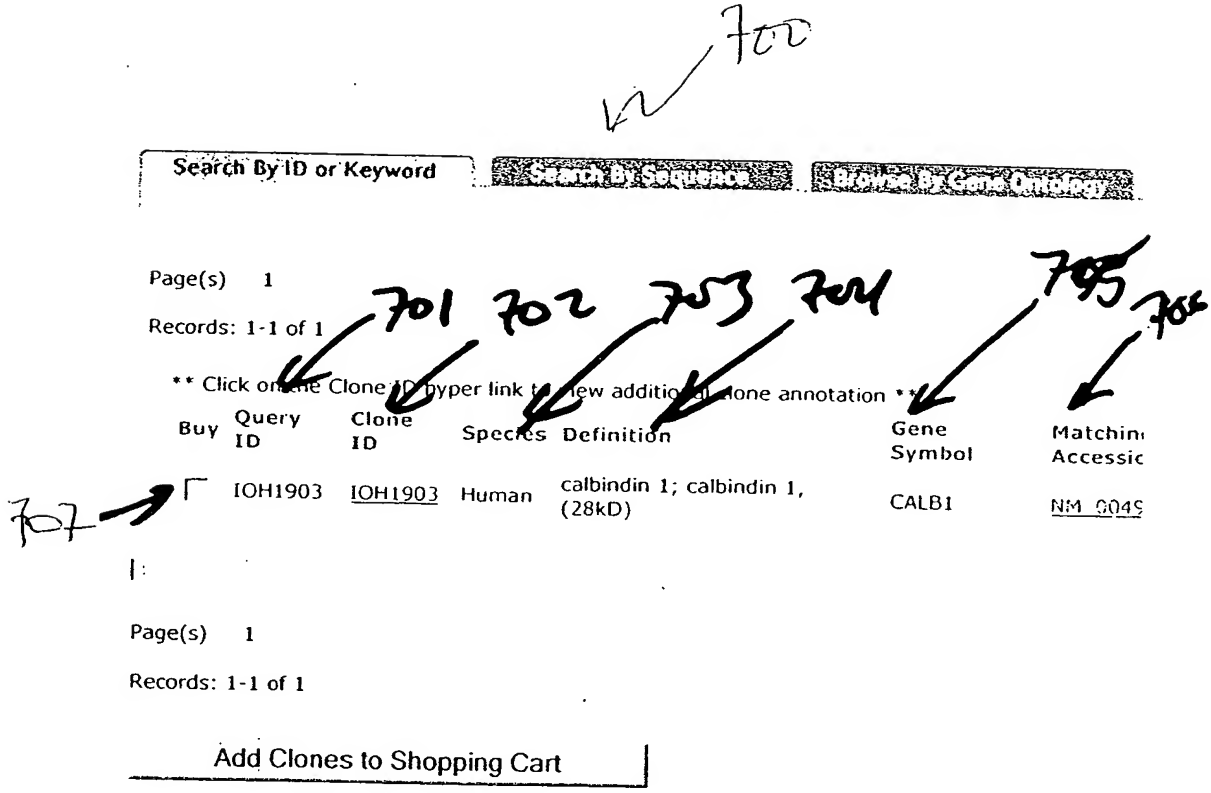

700
Search By ID or Keyword
Page(s) 1
Records: 1-1 of 1
** Click on the Clone ID hyper link to view additional clone annotation **
701
702
703
704
705
706
Buy
Query ID
Clone ID
Species
Definition
Gene Symbol
Matchin Accessic
707
IOH1903
IOH1903
Human
calbindin 1; calbindin 1, (28kD)
CALB1
NM_0049
Page(s) 1
Records: 1-1 of 1
Add Clones to Shopping Cart

FIG 12

800

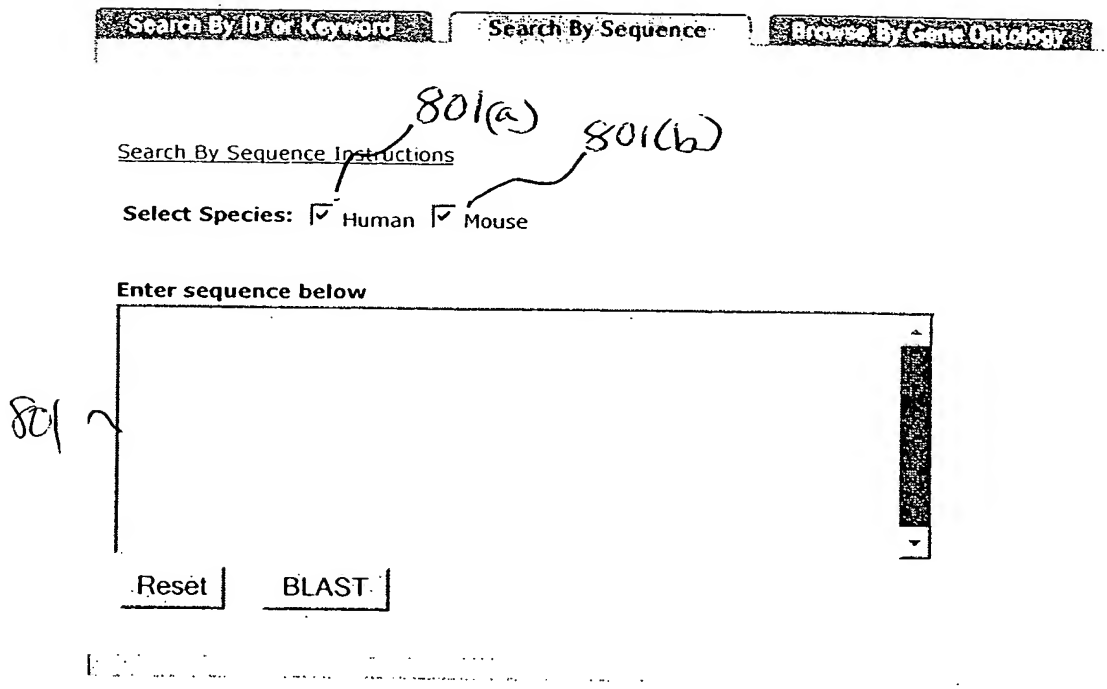

Search By Sequence
Search By Sequence Instructions
801(a)
801(b)
Select Species: Human Mouse
Enter sequence below
801
Reset
BLAST

Fig 13

900

Your search returned 2 results.

Results are currently sorted by e-value, you may also sort by collection type

Download all 2 results in excel format

Buy	Clone ID	Collection	Description
☐	IOH1903	Ultimate™ ORF Human Clones	Homo sapiens, calbindin 1; calbindin 1, (28kD)
☐	IOM18037	Ultimate™ ORF Mouse Clones	Mus musculus, calbindin-28K

901 902 903 904 905

Add Clones to Shopping Cart

e-value

Clone ID: IOH1903 Accession: NM_004929

Score = 1558.6 bits (786), Expect = 0
Identities = 786/786 (100%), Positives = 786/786 (100%)
Strand = Plus/Plus

```
Query:   1   ATGGCAGAATCCCACCTGCAGTCATCCCTCATCACAGCCTCACAGTTTTT  50
            ||||||||||||||||||||||||||||||||||||||||||||||||||
Sbjct:   1   ATGGCAGAATCCCACCTGCAGTCATCCCTCATCACAGCCTCACAGTTTTT  50
Query:  51   CGAGATCTGGCTCCATTTCGACGCTGACGGAAGTGGTTACCTGGAAGGAA 100
            ||||||||||||||||||||||||||||||||||||||||||||||||||
Sbjct:  51   CGAGATCTGGCTCCATTTCGACGCTGACGGAAGTGGTTACCTGGAAGGAA 100
Query: 101   AGGAGCTGCAGAACTTGATCCAGGAGCTCCAGCAGGCGCGAAAGAAGGCT 150
            ||||||||||||||||||||||||||||||||||||||||||||||||||
Sbjct: 101   AGGAGCTGCAGAACTTGATCCAGGAGCTCCAGCAGGCGCGAAAGAAGGCT 150
Query: 151   GGATTGGAGTTATCACCTGAAATGAAAACTTTTGTGGATCAGTATGGGCA 200
            ||||||||||||||||||||||||||||||||||||||||||||||||||
Sbjct: 151   GGATTGGAGTTATCACCTGAAATGAAAACTTTTGTGGATCAGTATGGGCA 200
Query: 201   AAGAGATGATGGAAAAATAGGAATTGTAGAGTTGGCTCACGTATTACCCA 250
            ||||||||||||||||||||||||||||||||||||||||||||||||||
Sbjct: 201   AAGAGATGATGGAAAAATAGGAATTGTAGAGTTGGCTCACGTATTACCCA 250
Query: 251   CAGAAGAGAATTTCCTGCTGCTCTTCCGATGCCAGCAGCTGAAGTCCTGT 300
            ||||||||||||||||||||||||||||||||||||||||||||||||||
Sbjct: 251   CAGAAGAGAATTTCCTGCTGCTCTTCCGATGCCAGCAGCTGAAGTCCTGT 300
Query: 301   GAGGAATTCATGAAGACATGGAGAAAATATGATACTGACCACAGTGGCTT 350
            ||||||||||||||||||||||||||||||||||||||||||||||||||
Sbjct: 301   GAGGAATTCATGAAGACATGGAGAAAATATGATACTGACCACAGTGGCTT 350
Query: 351   CATAGAAACTGAGGAGCTTAAGAACTTTCTAAAGGACCTGCTAGAAAAAG 400
            ||||||||||||||||||||||||||||||||||||||||||||||||||
Sbjct: 351   CATAGAAACTGAGGAGCTTAAGAACTTTCTAAAGGACCTGCTAGAAAAAG 400
Query: 401   CAAACAAGACTGTTGATGACACAAAATTAGCCGAGTATACAGACCTAATG 450
            ||||||||||||||||||||||||||||||||||||||||||||||||||
Sbjct: 401   CAAACAAGACTGTTGATGACACAAAATTAGCCGAGTATACAGACCTAATG 450
```

Fig 14

```
Query:   451  CTGAAACTATTTGATTCAAATAATGATGGGAAGCTGGAATTAACTGAGAT  500
Sbjct:   451  CTGAAACTATTTGATTCAAATAATGATGGGAAGCTGGAATTAACTGAGAT  500
Query:   501  GGCCAGGTTACTACCAGTGCAGGAGAATTTTCTTCTTAAATTCCAGGGAA  550
Sbjct:   501  GGCCAGGTTACTACCAGTGCAGGAGAATTTTCTTCTTAAATTCCAGGGAA  550
Query:   551  TCAAAATGTGTGGGAAAGAGTTCAATAAGGCTTTTGAGCTGTATGATCAG  600
Sbjct:   551  TCAAAATGTGTGGGAAAGAGTTCAATAAGGCTTTTGAGCTGTATGATCAG  600
Query:   601  GACGGCAATGGATACATAGATGAAAATGAACTGGATGCTTTACTGAAGGA  650
Sbjct:   601  GACGGCAATGGATACATAGATGAAAATGAACTGGATGCTTTACTGAAGGA  650
Query:   651  TCTGTGCGAGAAGAATAAACAGGATCTGGATATTAATAATATTACAACAT  700
Sbjct:   651  TCTGTGCGAGAAGAATAAACAGGATCTGGATATTAATAATATTACAACAT  700
Query:   701  ACAAGAAGAACATAATGGCTTTGTCGGATGGAGGGAAGCTGTACCGAACG  750
Sbjct:   701  ACAAGAAGAACATAATGGCTTTGTCGGATGGAGGGAAGCTGTACCGAACG  750
Query:   751  GATCTTGCTCTTATTCTCTGTGCTGGGGATAACTAG  786
Sbjct:   751  GATCTTGCTCTTATTCTCTGTGCTGGGGATAACTAG  786
```

back to top

Clone ID: IOM18037 Accession: NM_009788

Score = 1090.8 bits (550), Expect = 0
Identities = 727/786 (92%), Positives = 727/786 (92%)
Strand = Plus/Plus

```
Query:     1  ATGGCAGAATCCCACCTGCAGTCATCCCTCATCACAGCCTCACAGTTTTT  50
Sbjct:     1  ATGGCAGAATCCCACCTGCAGTCATCTCTGATCACAGCCTCACAGTTTTT  50
Query:    51  CGAGATCTGGCTCCATTTCGACGCTGACGGAAGTGGTTACCTGGAAGGAA  100
Sbjct:    51  TGAGATCTGGCTTCATTTCGACGCTGACGGAAGTGGTTACCTGGAAGGAA  100
Query:   101  AGGAGCTGCAGAACTTGATCCAGGAGCTCCAGCAGGCGCGAAAGAAGGCT  150
Sbjct:   101  AGGAGCTGCAGAACTTGATCCAGGAGCTTCTGCAGGCGCGAAAGAAGGCT  150
Query:   151  GGATTGGAGTTATCACCTGAAATGAAAACTTTTGTGGATCAGTATGGGCA  200
Sbjct:   151  GGATTGGAGCTATCACCGGAAATGAAATCCTTTGTGGATCAATATGGACA  200
Query:   201  AAGAGATGATGGAAAAATAGGAATTGTAGAGTTGGCTCACGTATTACCCA  250
Sbjct:   201  GAGAGATGATGGAAAAATAGGAATTGTAGAGTTGGCTCACGTCTTACCCA  250
Query:   251  CAGAAGAGAATTTCCTGCTGCTCTTCCGATGCCAGCAGCTGAAGTCCTGT  300
Sbjct:   251  CAGAAGAGAATTTCTTGCTGCTCTTTCGATGCCAGCAACTGAAGTCCTGC  300
Query:   301  GAGGAATTCATGAAGACATGGAGAAAATATGATACTGACCACAGTGGCTT  350
Sbjct:   301  GAGGAATTCATGAAGACTTGGAGAAAGTATGATACTGACCACAGCGGCTT  350
Query:   351  CATAGAAACTGAGGAGCTTAAGAACTTTCTAAAGGACCTGCTAGAAAAAG  400
Sbjct:   351  CATCGAAACCGAGGAACTTAAGAACTTTCTAAAGGACCTACTAGAGAAAG  400
Query:   401  CAAACAAGACTGTTGATGACACAAAATTAGCCGAGTATACAGACCTAATG  450
Sbjct:   401  CAAACAAGACTGTGGATGATACAAAACTAGCAGAGTACACAGACCTCATG  450
Query:   451  CTGAAACTATTTGATTCAAATAATGATGGGAAGCTGGAATTAACTGAGAT  500
Sbjct:   451  CTGAAACTATTTGATTCAAATAATGACGGAAAGCTGGAACTGACAGAGAT  500
Query:   501  GGCCAGGTTACTACCAGTGCAGGAGAATTTTCTTCTTAAATTCCAGGGAA  550
Sbjct:   501  GGCCAGGTTACTACCAGTGCAGGAAAATTTCCTTCTTAAATTCCAGGGAA  550
Query:   551  TCAAAATGTGTGGGAAAGAGTTCAATAAGGCTTTTGAGCTGTATGATCAG  600
Sbjct:   551  TCAAAATGTGTGGGAAAGAGTTCAATAAGGCTTTTGAGTTATATGATCAG  600
Query:   601  GACGGCAATGGATACATAGATGAAAATGAACTGGATGCTTTACTGAAGGA  650
Sbjct:   601  GATGGCAACGGATACATAGATGAAAATGAGCTGGATGCTTTGCTGAAAGA  650
Query:   651  TCTGTGCGAGAAGAATAAACAGGATCTGGATATTAATAATATTACAACAT  700
```

Fig-14

```
Sbjct:   651   TCTGTGTGAGAAGAACAAACAGGAATTGGATATTAACAATATTACTACAT   700
Query:   701   ACAAGAAGAACATAATGGCTTTGTCGGATGGAGGGAAGCTGTACCGAACG   750
              |||||||||||||||||| ||||||||||||||||||||||||||||||
Sbjct:   701   ACAAGAAGAACATAATGGCCTTGTCGGATGGAGGGAAGCTGTACCGAACA   750
Query:   751   GATCTTGCTCTTATTCTCTGTGCTGGGGATAACTAG   786
              || |||||||||||||| | |||||| || ||||||
Sbjct:   751   GACCTTGCTCTTATTCTTTCTGCTGGAGACAACTAG   786
```

back to top

Results returned in 19 seconds.

Fig. 14

Fig 15

115

[Human]{Mouse}

Gene Ontology

Biological Process

- **behavior** [17] {5}
- **biological_process unknown** [141] {7}
- **cellular process** [1719] {530}
- **development** [377] {107}
- **physiological processes** [2984] {1140}
- **viral life cycle** [8] {2}

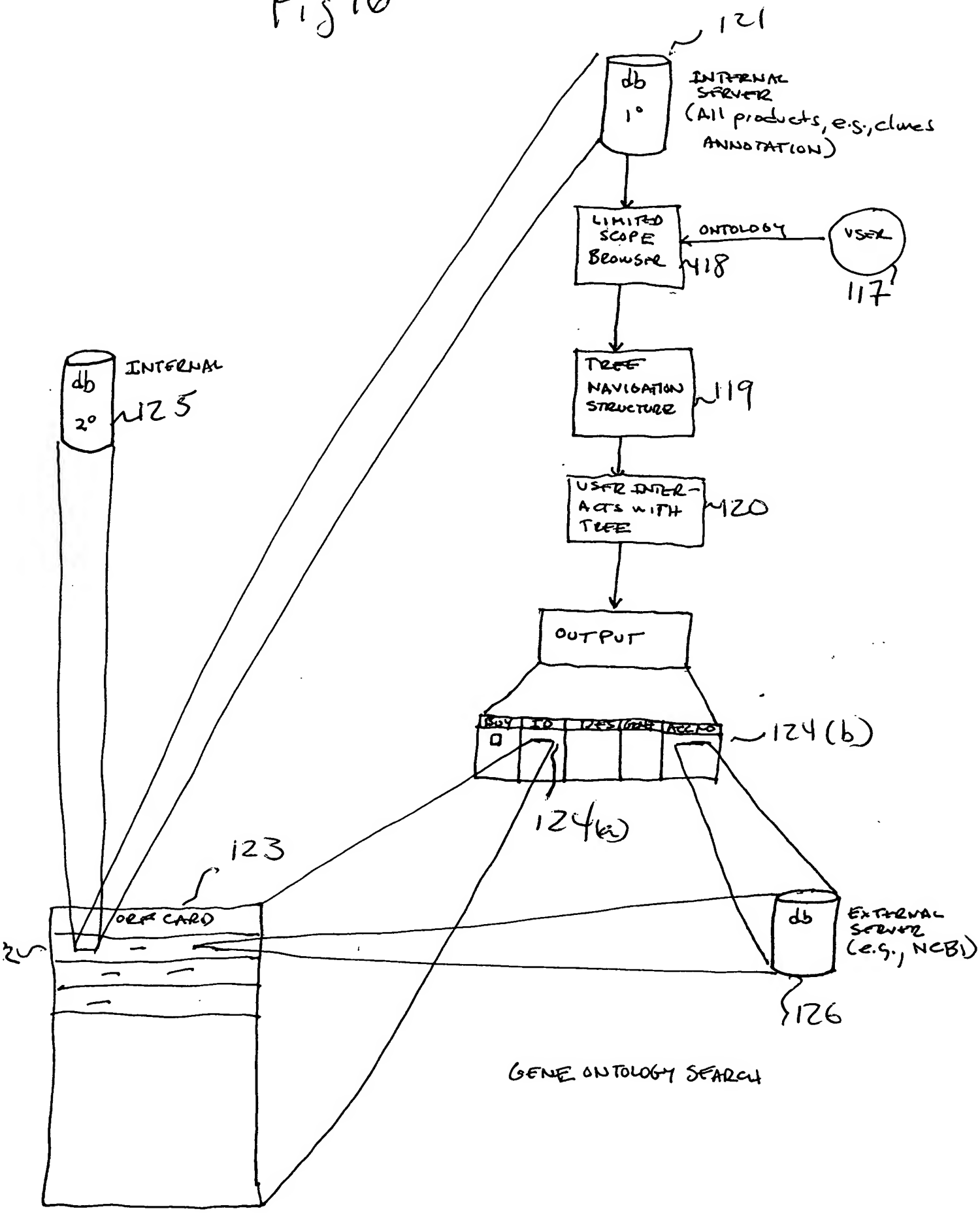
Cellular Component

- **cell** [2627] {924}
- **cellular_component unknown** [164] {11}
- **extracellular** [233] {67}
- **unlocalized** [22] {13}
- **virion** {5}

Molecular Function

- **anticoagulant activity** [8] {2}
- **antioxidant activity** [13] {6}
- **apoptosis regulator activity** [39] {14}
- **binding activity** [2058] {787}
- **cell adhesion molecule activity** [48] {13}
- **chaperone activity** [70] {23}
    - **defense/immunity protein activity** [67] {12}
    - **enzyme activity** [1499] {695}
    - **enzyme regulator activity** [137] {49}
    - **molecular_function unknown** [203] {41}
- **motor activity** [25] {10}
- **nutrient reservoir activity** [1]
- **protein stabilization activity** [1]
- **protein tagging activity** [3]
- **signal transducer activity** [583] {153}
    - **structural molecule activity** [243] {85}
- **surfactant activity** [3]
- **toxin activity** [2]
- **transcription regulator activity** [253] {78}

Fig 16


121
db
1°
INTERNAL SERVER
(All products, e.g., clones
ANNOTATION)
LIMITED SCOPE BROWSER
418
ONTOLOGY
USER
117
db
2°
INTERNAL
125
TREE NAVIGATION STRUCTURE
119
USER INTERACTS WITH TREE
120
OUTPUT
124(b)
124(a)
123
ORF CARD
db
EXTERNAL SERVER
(e.g., NCBI)
126
GENE ONTOLOGY SEARCH